



National Transportation Safety Board Aviation Accident Final Report

Location:	MORENO, CA	Accident Number:	LAX97LA270
Date & Time:	08/01/1997, 1500 PDT	Registration:	N322FA
Aircraft:	Consolidated-Vultee PBY-5A(28-5ACF)	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Serious
Flight Conducted Under:	Part 137: Agricultural		

Analysis

After touching down to scoop another load of water, the pilot added power and the aircraft pitched forward. The pilot heard a pop and felt a sudden decelerative force. When the nose began to bowsuck, he applied more back pressure but the aircraft did not respond. The floor split open and water began rushing into the cockpit. The left nose gear door locking pin was found separated from its hydraulic actuator. It displayed a bend that corresponded to its retracted position in the pin guide. The deformation prevented investigators from reinserting the damaged pin back through the guide. The left mycarta block remained attached to the door and did not exhibit any damage.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the implosion of the unlocked left nose gear door which resulted in the hydraulic disintegration of the forward fuselage. The cause of the locking pin actuator malfunction was not determined.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: LANDING

Findings

1. (C) MISCELLANEOUS,DOWEL/PIN - NOT ENGAGED
2. (C) DOOR,LANDING GEAR - NOT SECURED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: LANDING

Findings

3. TERRAIN CONDITION - WATER

Occurrence #3: NOSE OVER

Phase of Operation: LANDING

Factual Information

On August 1, 1997, at 1500 hours Pacific daylight time, a Consolidated-Vultee PBY-5A(28-5ACF), N322FA, crashed while scooping water from the San Vicente reservoir near Moreno, California. The aircraft was destroyed and the pilot and copilot received serious injuries. The aircraft was being operated by Airborne Fire Attack as a fire fighting water bomber under 14 CFR Part 137 when the accident occurred. The flight originated in Santa Ana, California, at 1352 on the day of the accident. Visual meteorological conditions prevailed at the time and no flight plan was filed.

The pilot had returned to the reservoir after his third water bombing run and was in the process of scooping another load of water. He stated that the water on the reservoir appeared smooth with some evidence of catspaws, or wind gusts, on the surface. He estimated his speed at touchdown to be between 70 and 75 knots, with a left quartering tailwind blowing from 3 to 5 knots.

After touching down, the aircraft had been on the water about 2 to 3 seconds when he began to advance the throttle to takeoff power. The aircraft pitched forward from 3 degrees nose up until it reached about a 1-degree nose up attitude. As the pitch changed, he increased back pressure on the elevator control.

The pilot said that about that time the aircraft encountered an approaching gust of wind that was visible on the surface of the water. He then heard a loud pop and felt a sudden decelerative force that forced him forward in his seat. The nose of the aircraft began to bowsuck and he attempted to apply more back pressure; however, the aircraft did not respond. The cockpit floor split open and water began rushing into the cockpit between both crewmembers.

During the accident sequence, the cockpit separated from the aircraft and the crew found themselves underwater. The pilot reached down and unfastened his lap belt, blew air bubbles, and then followed them to the surface. The copilot also unfastened his lap belt, saw light through the water, and swam toward it until he surfaced under the aircraft's wing.

When the landing gear is retracted, the nose gear doors close and are then secured in that position with locking pins. The pins extend aft from the hull into a mycarta block attached to the leading edge of each door. Pin movement is initiated by a hydraulic actuator that is controlled by a sequencing valve that is activated as the gear is raised or lowered. The copilot reported that the landing gear light was illuminated, indicating to him that the pins were in place.

Safety Board investigators found that the left nose gear door locking pin had separated from its hydraulic actuator. The pin was later found lodged in a fold of metal in the cockpit. It displayed a bend that dimensionally corresponds to the guide when the pin in the retracted position. The bend also prevented investigators from reinserting the damaged pin back through the pin guide.

The right nose gear door locking pin remained attached and was found in the extended position. Both nose gear doors were separated from the hull and displayed crushing and tearing. The left mycarta block remained attached to the door and was undamaged.

The aircraft logbooks were onboard the aircraft at the time of the accident and were not

recovered.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	37, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	06/06/1997
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	10200 hours (Total, all aircraft), 160 hours (Total, this make and model), 9600 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Consolidated-Vultee	Registration:	N322FA
Model/Series:	PBY-5A(28-5ACF) PBY-5A(28-	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	560
Landing Gear Type:	Retractable - Amphibian; Hull; Tricycle	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	30500 lbs
Time Since Last Inspection:	30 Hours	Engines:	2 Reciprocating
Airframe Total Time:	17427 Hours	Engine Manufacturer:	P&W
ELT:	Installed	Engine Model/Series:	R1830-92
Registered Owner:	WELLS AVIATION, INC.	Rated Power:	1200 hp
Operator:	JOHN MILTON WELLS	Operating Certificate(s) Held:	
Operator Does Business As:	AIRBORNE FIRE ATTACK	Operator Designator Code:	WJ5G

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	SEE, 385 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1449 PDT	Direction from Accident Site:	205°
Lowest Cloud Condition:	Scattered / 8000 ft agl	Visibility	25 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	14 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	37° C
Precipitation and Obscuration:			
Departure Point:	SANTA ANA, CA (SNA)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1352 PDT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	2 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ROBERT R CRISPIN	Report Date:	06/09/1999
Additional Participating Persons:	SWEDE GAMBLE; SAN DIEGO, CA LARRY BENSON; RIVERSIDE, CA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).